



UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
-----------------	-------------	----------------------	---------------------	------------------

10/724,519

11/28/2003

Francois Michaud

BKP-007

8900

22832 7590 04/05/2007
Kirkpatrick & Lockhart Preston Gates Ellis LLP
STATE STREET FINANCIAL CENTER
One Lincoln Street
BOSTON, MA 02111-2950

EXAMINER

YEAGLEY, DANIEL S

ART UNIT

PAPER NUMBER

3611

SHORTENED STATUTORY PERIOD OF RESPONSE	MAIL DATE	DELIVERY MODE
--	-----------	---------------

3 MONTHS

04/05/2007

PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

If NO period for reply is specified above, the maximum statutory period will apply and will expire 6 MONTHS from the mailing date of this communication.

Office Action Summary	Application No. 10/724,519	Applicant(s) MICHAUD ET AL.	
	Examiner Daniel Yeagley	Art Unit 3611	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 16 October 2006.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1,2,4-6,11-13,19,21,25,26,29,32-37,42-47,60-64,66,68,70 and 72-98 is/are pending in the application.
 4a) Of the above claim(s) 93-98 is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1,2,4-6,11-13,19,21,25,26,29,32-37,42-47,60-64,66,68,70 and 72-92 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☒ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 16 October 2006 is/are: a) ☐ accepted or b) ☒ objected to by the Examiner.
 Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
 Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
 a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)
Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Election/Restrictions

1. Newly submitted claims 93-98 directed to an invention that is independent or distinct from the invention originally claimed for the following reasons: independent claim 93 requires the feature of a locomotion modular assembly being capable of being removable mounted and further requires the feature of a wheel mountable to a robotic platform with a steering system mounted to the wheel which are not features that were required in the originally elected claims.

Since applicant has received an action on the merits for the originally presented invention, this invention has been constructively elected by original presentation for prosecution on the merits. Accordingly, claims 93-98 are withdrawn from consideration as being directed to a non-elected invention. See 37 CFR 1.142(b) and MPEP § 821.03.

Drawings

2. The drawings are objected to under 37 CFR 1.83(a). The drawings must show every feature of the invention specified in the claims. Therefore, the body having a peripheral contour between the top and bottom surface of the body, wherein at least two locomotion members are mounted to the contour must be shown or the feature(s) canceled from the claim(s). No new matter should be entered.

Corrected drawing sheets in compliance with 37 CFR 1.121(d) are required in reply to the Office action to avoid abandonment of the application. Any amended replacement drawing sheet should include all of the figures appearing on the immediate prior version of the sheet, even if only one figure is being amended. The figure or figure number of an amended drawing

Art Unit: 3611

should not be labeled as “amended.” If a drawing figure is to be canceled, the appropriate figure must be removed from the replacement sheet, and where necessary, the remaining figures must be renumbered and appropriate changes made to the brief description of the several views of the drawings for consistency. Additional replacement sheets may be necessary to show the renumbering of the remaining figures. Each drawing sheet submitted after the filing date of an application must be labeled in the top margin as either “Replacement Sheet” or “New Sheet” pursuant to 37 CFR 1.121(d). If the changes are not accepted by the examiner, the applicant will be notified and informed of any required corrective action in the next Office action. The objection to the drawings will not be held in abeyance.

Claim Objections

3. Claims 4 – 6, 16, 17, 35, 61, 80, 84 and 91 are objected to because of the following informalities:

Regarding claim 4, the term, “*said* steering assembly” now lacks proper antecedent basis.

Regarding claims 16 and 17, the terms, “*the* diameter” lacks proper antecedent basis.

Regarding claim 35, the term, “*said* at least one controller” lacks proper antecedent basis.

Regarding claim 35, lines 16 and 17, the terms, “*said* locomotion assembly” now lack proper antecedent basis.

Regarding claim 61, the term, “*the* Control Area Network” lacks proper antecedent basis.

Regarding claim 62, the term, “*the* version” lacks proper antecedent basis.

Regarding claims 80, 84 and 91, the terms, “*said* second plane” lack antecedent basis.

Appropriate corrections are required.

Claim Rejections - 35 USC § 112

4. The following is a quotation of the first paragraph of 35 U.S.C. 112:

The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

5. Claim 73 is rejected under 35 U.S.C. 112, first paragraph, because the specification, while being enabling for “the body having contoured corners with the locomotion members mounted to the bottom surface of the body as shown in 30A, does not reasonably provide enablement for the body having a peripheral contour between the top and bottom surface of the body with at least two locomotion members being mounted to the contour as claimed in new claim 73. The specification does not enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the invention commensurate in scope with these claims.

6. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

7. Claims 42 – 47, 60 – 64, 66 – 68, 70 and 92 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

- a. Regarding claim 42, line 9, the term, “a locomotion member” lacks sufficient antecedent basis because it is unclear if applicant is referring to one of the two locomotion members 18 already cited earlier or is trying to claim a different element in a steering assembly.

- b. Regarding claim 42, line 20 and line 23, both terms “*said locomotion member*” now lack sufficient antecedent basis because it is unclear which of the locomotion members applicant is referencing; i.e.; one of the at least two locomotion members 18 or some other locomotion member (?) of the steering assembly.
- c. Regarding claim 43, the term “*said locomotion member*” now lacks sufficient antecedent basis because it is unclear which of the locomotion members, applicant is referencing.
- d. Regarding claims 43 and 44, the terms, “*a sensor*” lack sufficient antecedent basis because it is unclear if applicant is referring to the sensor 309 already cited in claim 42 or is trying to claim other different sensors coupling the locomotion member and the locomotion controller.
- e. Regarding claims 43 and claim 44, lines 3, the terms “*said sensor*” lack sufficient antecedent basis because it is now unclear which sensor applicant is referencing.
- f. Regarding claim 47, the terms “*said locomotion member*” now lack sufficient antecedent basis because it is unclear which locomotion member applicant is referencing and further the terms “*said locomotion member configuration*” also lacks sufficient antecedent basis because it is unclear what applicant considers a configuration.
- g. Regarding claim 92, the terms, “*said at least one locomotion member*” lacks sufficient antecedent basis because it is unclear which locomotion member applicant is referring to or if applicant is trying to claim a different locomotion member.

Claim Rejections - 35 USC § 102

8. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

9. Claims 1, 2, 4 – 6, 11, 18 – 19, 25, 26, 29, 32 – 37 and 72 – 91 are rejected under 35 U.S.C. 102(b) as being anticipated by Fletcher et al '287.

Fletcher shows a robotic platform 10 defining at least three corners which comprising four corners with four locomotion members that are readable as being independently pivotable about a corner of the body in a first and second plane relative to the body as shown in (figure 2 and figure 6), wherein at least two locomotion members 40 being mounted to a body 12 and chassis via a steering assembly, wherein the steering assembly 20 includes a motor 72 secured to the chassis via a motor bracket 38 (figure 5), wherein a steering controller includes pivot-controlling means so as to pivot in a first plane relatively to the body and wherein the steering assembly includes work reducing means providing a lever effect between the chassis and the locomotion member (figure 2), the locomotion members include an endless track assembly (figure 3) having a driving wheel 60, with a protective disk 38 which is covered by a coating (surface) and is mounted on a peripheral surface of the driving wheel and extends radially from the driving wheel, a drive system (figure 5) for driving the driving wheel that includes a driven wheel 52, an endless track 54 and a track tensioning assembly 44 and at least one controller 18 mounted to the body and coupled to at least two locomotion members configured to actuate the movement of the locomotion members with a power supply system 74 mounted to the body and

Art Unit: 3611

coupled to at least one controller, such that each of the locomotion members includes a locomotion controller *for* actuating the drive system *for* energizing the at least one controller and the at least two locomotion members (column 2-9), wherein the drive system includes components that are readable as being a mounting assembly, a driving wheel actuator, a driving mechanism and a driving wheel support structure mounted to the mounting assembly (figure 2-6), wherein the steering assembly includes a pivoting actuator and has at least one controller configured to control a driving wheel actuator, a driving mechanism and a pivoting actuator (column 2 - 9), wherein the mounting assembly includes first and second mounting plates 42 and 82 secured to one another so as to face each other and provides a gap therebetween, wherein the driving wheel actuator includes a disk type motor 74 having an output driving shaft 76 mounted to the second mounting plate 82 on a side opposite the first mounting plate 42 so that the output driving shaft extends through the second mounting plate towards the first mounting plate and includes an internally toothed gear (clutch gear 84) coaxially mounted on the second plate between the first and second plates and operatively coupled to the output driving shaft of the motor via a pulley assembly (gears; column 5), wherein the driving mechanism includes the inner toothed gear 84 being mounted to the track-tensioning assembly and the motor shaft being mounted to the first mounting plate via clutch gears and includes a configured speed-reduction gear set as broadly claimed, and the track-tensioning assembly includes a support frame (leg 44 and chain 64) which are mounted within the endless track 54 to both the driving wheel 60 and the driven wheel 52 therebetween, such that the driving wheel is received in a ring portion (chain) of the support frame, and wherein the body further includes handles secured to columns (seat frame) having a mounting plate (seat) mounted on top of the

Art Unit: 3611

chassis via the columns that allows receiving equipments (operator and controller 18 the comprises at least one interface panel) carried by the robotic platform and wherein the robotic platform further comprises at least one environment recognition module 17 mounted on one of the at least two locomotion members, and wherein a shell is mounted onto the chassis with shell portions 14 that are removably secured to the chassis and selectively allow access to internal parts 17 of the body as broadly claimed.

Claim Rejections - 35 USC § 103

10. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

11. Claims 42 – 45, 60 – 64, 66 – 68 and 70 are rejected under 35 U.S.C. 103(a) as being unpatentable over Fletcher et al '287 in view of Torrie et al '788.

Fletcher discloses a robotic platform having a controllable locomotion assembly as broadly claimed; as stated above, but lacked the environment recognition module mounted to a platform having a sensor, controller and an energizing system connected to the locomotion assembly as claimed.

Torrie shows a robotic platform having body and chassis, a locomotion assembly with at least two locomotion members mounted to the body (figure 6), wherein each locomotion member includes a drive assembly and a locomotion controller (figure 7-10) and includes a steering assembly with a steering mechanism coupled to a steering controller which further

Art Unit: 3611

shows the prior art of utilizing an environment recognition module mounted to the platform that uses a sensor and a controller, and an energizing system that is connect to the locomotion assembly, a power supply controller and a communication data bus interconnecting a network of the locomotion controller, the steering controller and the environment recognition module controller as broadly claimed, wherein as understood, (page 1-7), the steering controller of Torrie is coupled to a steering mechanism via a sensor mounted to the steering mechanism which is coupled to the steering controller, and the locomotion controller being coupled to the drive assembly via a sensor mounted to the drive assembly which is coupled to the locomotion controller, such that a central control system is coupled to the locomotion controller, the steering controller and the recognition module controller via a communication data bus so as to achieve at least one predetermined operational mode, such that the data bus allows data between the locomotion controller, the steering controller, and the recognition module controller (figure 1 - 17; paragraph 54 - 81).

It would have been obvious to one of ordinary skill in the art at the time the invention was made to have modified the robotic platform of Fletcher locomotion members with additional and enhanced control means, such as suggested by the control means of Torrie robotic platform, simply to improve the control means of Fletcher platform with remotely controlled and/or programmable artificially intelligent control systems using environmental parameters as taught by Torrie.

12. Claims 12, 13 and 15 are rejected under 35 U.S.C. 103(a) as being unpatentable over Fletcher et al '287 in view of Boivin et al '586.

Fletcher as stated above disclosed a robotic platform with at least two locomotion members mounted to a body; wherein the locomotion members included an endless track assembly having a driving wheel, a driven wheel, an endless track and a track tensioning assembly that included a support frame (leg 44 and chain 64) that are mounted within the endless track to both the driving wheel and the driven wheel, wherein the driving wheel is received in a ring portion (chain) of the support frame, but failed to show a tensioning sub-assembly for adjusting the tension of the endless track.

Boivin shows a platform mounted to a body with locomotion members having an endless track assembly (figure 1) comprising a driving wheel, a driven wheel, an endless track and a track tensioning assembly, wherein the locomotion members disclose the prior art of providing a track tension means in an endless track arrangement by utilizing a tensioning sub-assembly (figure 2 –3 and 5, column 1), wherein in the track-tensioning assembly includes a support frame 56 with skid plates which are mounted within the endless track 23 to both the driving wheel and the driven wheel (figure 2), wherein the driving wheel is received in a ring portion (at axle 56) of the support frame with shows the prior art of a tensioning sub-assembly (at the far right of the support frame) for adjusting the tension of the endless track, wherein the tensioning sub-assembly includes a driven wheel mounting bracket (bracket at right side of frame support 56 in figure 2 for mounting the driven wheel 28), which is selectively movable within the endless track 23 in a direction away from a driving wheel 24 and generally defined by the endless track as claimed.

It would have been obvious to one of ordinary skill in the art at the time the invention was made to have added a track tensioning means to the track tensioning assembly of Fletcher

Art Unit: 3611

locomotion members, such as suggested by the track tensioning sub-assembly of Boivin in order to provide a simple track tension adjusting means to ensure proper track tension in the endless track of Fletcher as needed to maintain proper tension upon the endless track belts to keep them in due course and prevent accidental loosening as taught by Boivin.

13. Claims 16 and 17 are rejected under 35 U.S.C. 103(a) as being unpatentable over Fletcher et al '287 in view of Boivin et al '586.

Fletcher shows a robotic platform having a locomotion members 40 with a driving wheel and a driven wheel, but failed to show a driving wheel being larger or smaller than the driven wheel.

Boivin shows a platform with locomotion members having an endless track assembly with a larger driving wheel than the driven wheel as claimed (figure 2, column 2).

It would have been obvious to one of ordinary skill in the art at the time the invention was made to have modified the wheel size of the Fletcher locomotion members with an alternate larger or smaller driving wheel in ratio to the driven wheel, such as suggested by the larger driving wheel of Boivin locomotion member with respect to the driven wheel, dependent upon users preference to provide a different drive ratio between the driving wheel and the driven wheel which is well known and old in the transmission art and further to provide an endless track belt with a punctually localized surface contact area with the ground surface as taught by Boivin.

Art Unit: 3611

14. Claim 21 are rejected under 35 U.S.C. 103(a) as being unpatentable over Fletcher et al '287 in view of Kadonoff et al '658.

Fletcher shows a robotic platform comprising a control system having at least one environment recognition module 17 mounted on one of the at least two locomotion members, but failed to show each of the at least two locomotion members having at least one position sensor and an environment recognition module that included at least one proximity sensor and a long-range sensor mounted to the locomotion member and coupled to the controller and further including at least one ultra-sound sensor and an infrared sensor.

Kadonoff discloses a robotic platform with locomotion members having a control system that discloses the prior art of incorporating a control sensor system for utilizing at least one environment recognition module mounted on one of the locomotion members that includes at least one position sensor and an environment recognition module having at least one proximity sensor, long-range sensor, ultra-sound sensor and an infrared sensor mounted to the locomotion member and coupled to the controller (column 1-22).

It would have been obvious to one of ordinary skill in the art at the time the invention was made to have modified the control means of Fletcher robotic platform with additional or alternate sensors to further monitor and control various parameters to enhance the control and operation of the robotic platform by utilizing various types of sensors, much like those disclosed by Kadonoff's control means, simple to enhance the control of Fletcher robotic platform; as further implied by applicant that the configuration, number and type of sensors used may vary.

Allowable Subject Matter

15. Claims 46 and 47 would be allowable if rewritten to overcome the rejection(s) under 35 U.S.C. 112, 2nd paragraph, set forth in this Office action and to include all of the limitations of the base claim and any intervening claims.

Response to Arguments

16. Applicant's arguments filed 10/06/06 have been fully considered but they are not persuasive and are moot in view of the new ground(s) of rejection as now claimed. Applicants' arguments that the references do not show a track member mounted about the corner of the body is not persuasive because as broadly claimed Fletcher; as well as Torrie and also Crane all show platforms with their track members mounted about the corner of the platform as broadly claimed and therefore is readable on the claim. Applicant should note that, the test for obviousness is not whether the features of a secondary reference may be bodily incorporated into the structure of the primary reference; nor is it that the claimed invention must be expressly suggested in any one or all of the references. Rather, the test is what the combined teachings of the references would have suggested to those of ordinary skill in the art. See *In re Keller*, 642 F.2d 413, 208 USPQ 871 (CCPA 1981).

Conclusion

17. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

Art Unit: 3611


A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

18. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Daniel Yeagley whose telephone number is (571)-272-6655. The examiner can normally be reached on Mon. - Fri; first Friday off.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Lesley D. Morris can be reached on (571) - 272 - 6651. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

D.Y.


PAUL N. DICKSON
SUPERVISORY PATENT EXAMINER
TECHNOLOGY CENTER 3600

7/2/07